WHAT IS CLAIMED IS:

1. A semiconductor device having a bottom surface and mountable on a wiring board with the bottom surface being opposed to the wiring board, the semiconductor device comprising:

a semiconductor chip;

a mold resin encapsulating the semiconductor chip;

a first heat spreader joined to the semiconductor chip on the bottom surface side with respect to the semiconductor chip, and extending in substantially parallel with the bottom surface with both ends thereof protruding from an edge of the mold resin when viewed in a direction perpendicular to the bottom surface, the first heat spreader being capable of being joined to the wiring board by means of the both ends thereof; and

a second heat spreader joined to the semiconductor chip on a top surface side opposite to the bottom surface with respect to the semiconductor chip, and extending in substantially parallel with the bottom surface to cross with the first heat spreader with both ends thereof protruding from the edge of the mold resin when viewed in a direction perpendicular to the bottom surface, the second heat spreader being capable of being joined to the wiring board by means of the both ends thereof,

wherein one of the first and second heat spreaders is

a lead frame electrically connected to the semiconductor chip.

2. A semiconductor device according to Claim 1, wherein:

the semiconductor chip falls within an intersection of the first and second heat spreaders completely when viewed in a direction perpendicular to the bottom surface.

3. A semiconductor device according to Claim 1, wherein:

the first heat spreader is exposed to the bottom surface of the semiconductor device.

4. A semiconductor device according to Claim 1, wherein:

both of the first and second heat spreaders are lead frames electrically connected to the semiconductor chip.

5. A semiconductor device according to Claim 4, wherein:

the semiconductor chip is provided with a field effect transistor having a source electrode and a drain electrode, and the drain electrode is electrically connected to the first heat spreader, and the source electrode is electrically connected to the second heat spreader.

6. A semiconductor device according to Claim 1, wherein:

the semiconductor chip is connected wirelessly to one of the first and second heat spreaders.

7. A semiconductor device according to Claim 1, wherein:

both of the first and second heat spreaders are lead frames electrically connected to the semiconductor chip, and the semiconductor chip is connected wirelessly to both of the first and second heat spreaders.

8. A semiconductor device according to Claim 1, wherein:

the second heat spreader has a heat-spreading portion exposed through the mold resin on the top surface side of the semiconductor device.

9. A semiconductor device according to Claim 1, further comprising:

a third heat spreader joined to the second heat spreader and exposed through the mold resin.

10. A semiconductor device according to Claim 9, wherein:

the third heat spreader is provided with a plurality of plate-shaped portions exposed through the mold resin.